

What is claimed is:

1. A pedal powered flywheel power unit comprising:

- a) a power unit frame;
- b) a flywheel assembly including:
 - i) a flywheel axle,
 - ii) at least two mounting bearings that secure the flywheel axle to the power unit frame and allow the flywheel axle to rotate freely along its axis,
 - iii) at least one flywheel attached to the flywheel axle, and
 - iv) a flywheel gear set with at least one gear attached to the flywheel axle;
- c) a transfer axle assembly including:
 - i) a transfer axle,
 - ii) at least two mounting bearings that secure the transfer axle to the power unit frame and allow the transfer axle to rotate freely along its axis,
 - iii) a first transfer gear set with at least one gear attached to one end of the transfer axle, and
 - iv) a second transfer gear set with at least one gear attached to the other end of the transfer axle;
- d) a pedal assembly including:
 - i) a pedal axle,
 - ii) at least one pair of mounting bearings that secures the pedal axle to the power unit frame and allow the pedal axle to rotate freely along its axis,
 - iii) two pedals attached to either end of the pedal axle such that a human using the pedals will create rotational force along the pedal axle, and
 - iv) a pedal gear set with at least one gear attached to the pedal axle;
- e) a first chain operatively connecting the pedal gear set to the first transfer gear set;

- f) a second chain operatively connecting the second transfer gear set to the flywheel gear set; and
- g) a first transmission assembly including:
 - i) a transmission transfer gear attached to the flywheel axle,
 - ii) a transmission with multiple gears in a gearing ratio of 10:1 to .8:1,
 - iii) a transmission input gear attached to the transmission and operatively associated with the transmission transfer gear in approximately a 1:1 gearing ratio,
 - iv) a transmission output gear attached to the transmission that provides power output from the flywheel only when a clutch within the transmission is engaged.

2. The pedal powered flywheel power unit of claim 1 further comprising a third transfer gear set with at least one gear attached to the transfer axle and a second pedal assembly including:

- i) a second pedal axle,
- ii) at least one pair of mounting bearings that secures the second pedal axle to the power unit frame and allow the second pedal axle to rotate freely along its axis,
- iii) two pedals attached to either end of the second pedal axle such that a human using the pedals will create rotational force along the second pedal axle,
- iv) a second pedal gear set with at least one gear attached to the second pedal axle, and
- v) a third chain operatively connecting the second pedal gear set to the third transfer gear set.

3. The pedal powered flywheel power unit of claim 1 further comprising a rod that inserts into the flywheel axle and can connect to a flywheel axle of a second pedal powered flywheel power unit of claim 1 such that the two pedal powered flywheel power units operate in unison.

- 1 4. The pedal powered flywheel power unit of claim 1 further comprising a rod that inserts
2 into the transfer axle and can connect to a transfer axle of a second pedal powered
3 flywheel power unit of claim 1 such that the two pedal powered flywheel power unit
4 operate in unison.
- 1 5. The pedal powered flywheel power unit of claim 1 further comprising support
2 members located on the power unit frame for connecting to a wheeled vehicle support
3 frame.
- 1 6. The pedal powered flywheel power unit of claim 5 further comprising a wheeled
2 vehicle support frame that supports two axles with two wheels each wherein one set of
3 the wheels and axles is operatively connected to a steering mechanism and one axle is
4 operative connected to the transmission output gear.
- 1 7. The pedal powered flywheel power unit of claim 1 further comprising a third gear set
2 on the transfer axles that can be connected by a chain to a second pedal powered
3 flywheel power unit of claim 1 such that the two pedal powered flywheel power units
4 operate in unison.